

REMARKS

Claims 41 and 43 have been amended, and claims 1-7, 9-16, 23-33, 41-43 and 47-49 are pending and under consideration. Proper support for the amendment to claims 41 and 43 can be found in the specification at least at page 12. No new matter is presented in this Amendment. Claims 1, 41, 43 and 47 are the independent claims.

As a result, entry of the forgoing amendment is proper under 37 C.F.R. §1.116(b) because these amendments simply respond to the issues raised in the final rejection, and the foregoing amendments are believed to remove the basis of the outstanding rejections, and to place all claims in condition for allowance.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 41-43 and 47-49 are rejected under 35 U.S.C. §103(a) as being unpatentable over ECMA-267 120 mm DVD Read Only Disk and Matsui (U.S. Patent 5,661,707).

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of independent claim 41, it is noted that claim 41, as amended, recites a data scrambler for a high density optical recording and/or reproducing apparatus comprising, amongst other novel features, a random data generator generating random data having a random data generation cycle based on a result obtained by multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame.

The Office Action recognizes that ECMA-267 fails to teach or suggest a random data generator generating random data and adjusting a random data generation cycle and relies on Matsui for such a teaching.

Matsui discloses a method for removing the correlation between adjacent tracks, to enable stable tracking control. To do so, Matsui discloses that the period at which the scrambling signal makes a round is determined longer than a time length of an information signal quantity recorded on the maximum recording capacity (e.g., the outermost tracks), or that a part of the scrambling signals are used repeatedly (abstract, column 5, lines 29-34 and 62-65). That is, Matsui discloses a method for removing the correlation between adjacent tracks by

making the period of the scrambling signal longer than the time length of an information signal recorded on the outermost track. Matsui makes no reference to generating random data having a random data generation cycle based on a result obtained by multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame, as recited in amended independent claim 41.

Furthermore, independent claim 41 recites a second logic circuit. As noted in the Office Action, ECMA-267 fails to teach this novel feature recited in independent claim 41 and states that it is well known to those of ordinary skill in the art, that the addition of more hardware serves the advantage of speeding up computations, as the computational load can now be divided between the one piece of hardware.

Applicants respectfully traverse such reasoning for the following reason. The Office Action has provided no teaching or suggestion in the prior art that it would have been obvious to one of ordinary skill in the art to modify ECMA-267 to use a second logic circuit. Therefore, Applicants submit that at least this feature of claim 41, is not obvious to one of ordinary skill in the art. MPEP § 2143.01 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP § 2143.01 further instructs that "[a]lthough a prior art device may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." [See also In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed Cir. 1990)].

Accordingly, Applicants respectfully assert that the rejection of claim 41 under 35 U.S.C. §103(a) should be withdrawn because neither ECMA-267 nor Matsui, whether taken singly or combined teach or suggest each feature of independent claim 41.

Furthermore, Applicants respectfully assert that dependent claim 42 is allowable at least because of its dependence from claim 41, and because it includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claim 42 also distinguishes over the prior art.

Regarding the rejection of independent claim 43, it is noted that claim 43, as amended, recites a data scrambler comprising, amongst other novel features, a random data generator

which generates random data having a random data generation cycle based on a result obtained by multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame.

As noted above, neither ECMA-267 nor Matsui teach or suggest this novel feature.

Accordingly, Applicants respectfully assert that the rejection of claim 43 under 35 U.S.C. §103(a) should be withdrawn because neither ECMA-267 nor Matsui, whether taken singly or combined teach or suggest each feature of independent claim 43.

Regarding the rejection of independent claim 47, it is noted that claim 47 recites a data scrambler comprising a random data generator which generates random data using 32KB and which scrambles data having structure of 2 KB for a sector or a data frame and 64KB for an ECC block, and a scrambling circuit which scrambles the generated random data and outputs scrambled data in units of bytes.

Applicants respectfully traverse this rejection for at least the following reasons.

ECMA-267 discloses a data scrambler along the lines of the prior art disclosed by Applicants in Fig. 2. As noted on page 4, lines 1-3 of the specification, the random data generator and the scrambler using the generator shown in Fig. 2 cannot respond properly when generation of random data having a cycle greater than 32Kb corresponding to scrambling are required. Thus, the ECMA-267 data scrambler is not envisioned to work with ECC sizes of 64KB and 2 KB for a sector or data frame, and is instead only suggested as being used with ECC sizes of 32 KB and 2 KB for a sector or data frame.

On page 7 of the Office Action, the Examiner acknowledges this deficiency, but merely asserts, without support, that one skilled in the art would have been motivated to modify the 32 KB ECC capability to handle the 64 KB ECC size "in order to scramble larger data tracks." The Examiner does not point to a suggestion in the prior art to make this particular modification, or why one skilled in the art would not further modify the generator to generate the random data using 64 KB instead of 32 KB. Moreover, there is no evidence of record that such a modification would lead to the result described by the Examiner, or that such would remain compatible with the standard set forth in ECMA-267. As such, it is respectfully submitted that there is insufficient evidence of record to maintain a prima facie obviousness rejection of claim 47, and it is

respectfully requested that the Examiner reconsider and withdraw the rejection.

Similarly, since there is no suggestion that the data scrambler of the ECMA-267 is usable with 64 KB ECC, Applicants respectfully assert that the rejection of dependent claims 48 and 49 under 35 U.S.C. § 103(a) should be withdrawn at least because of their dependence from claim 47 and the reasons set forth above, and because the dependent claims includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 48 and 49 also distinguish over the prior art.

ALLOWABLE SUBJECT MATTER:

Claims 1-7, 9-16, 23-33 are allowable as previously indicated.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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